Pizza

Vision inspection systems are designed to provide critical measurements faster and with better repeatability than manual measurements, while providing the ability to measure and quantify product attributes that are difficult or impossible to calculate manually (e.g. topping percentage, contour defects, etc).

Deploying a KPM Vision Inspection System eliminates the need for data entry and manual charting, and ensures more reliable and repeatable QA measurements. You will also benefit from faster and easier product sampling, optional automatic rejection of defective or out-of-spec products, more data for less effort, and automated reporting.

Cheese Coverage
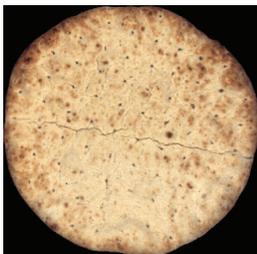
Crack & Dark Edge
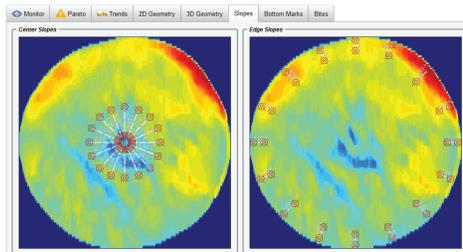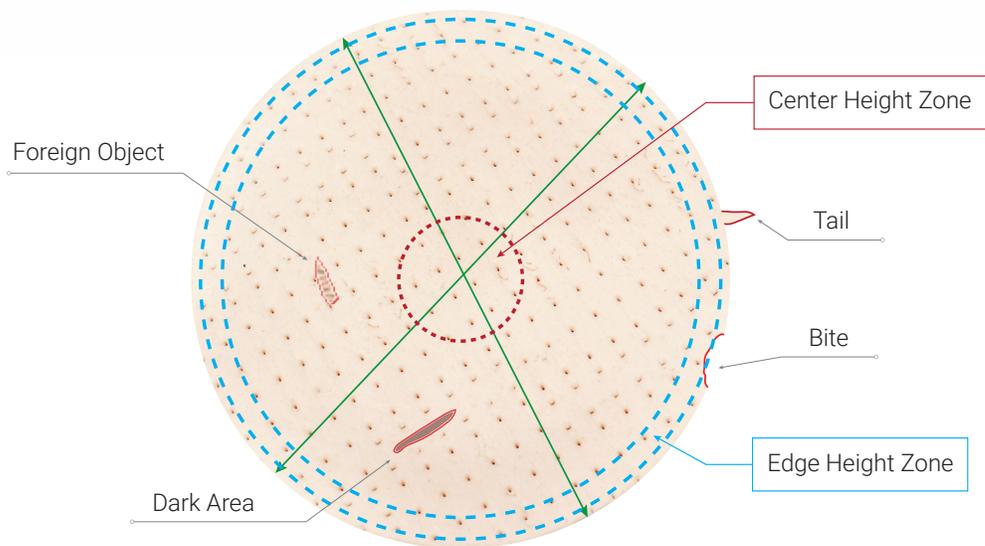
Center and Edge Height Analysis

HEIGHT 3D ANALYSIS

Peak Height	The highest point on the object when resting on a flat surface; calculated by taking the average of the 'N' highest height points measured on the top surface (N is user-configurable).
Min/Max/Mean Edge Height	Calculated based on 2D area data and 3D height information. Can be used with density to calculate predicted weight.
Center Spot (Floor) Height	The average height of the object in a user-defined region in the center of the object (e.g. the average height of the area in the red circle above).
Slopes	The curvature of the top surface on the product; measured by calculating the vertical change between the center and a user-defined ring near the edge of the product.

Virtually any food product can be measured using KPM Vision Inspection imaging technology, either directly during the production process (Over-Line / In-Line) or using a Benchtop Inspection System (Off-Line).
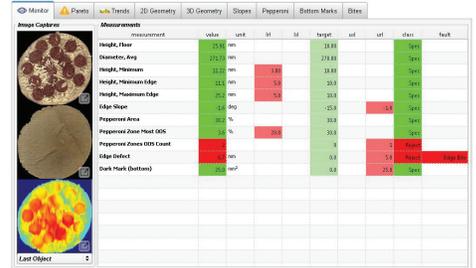
Below are some of the measurements available, particularly related to pizza shells, topped pizza, and plastic-wrapped pizza.

OVERHEAD 2D ANALYSIS

Customizable Summary

Surface Area	The overall area of the object. Used to find doubles, large and small products.
Blister Area	The area of any dark spots (i.e. blisters) on the top surface.
Blotchy Area	The area of any white/blotchy regions (i.e. blotchiness) on the top surface.
Shell/Base Average Color	The average bake color of the product with dark marks and/or edge area (if applicable) ignored for the calculation.
Min/Max Diameter	The minimum and maximum of 180 diameters of the object.
Average Diameter	The average of 180 diameters of the object as measured every one degree through the center of the object.
Topping Blobs	The percentage of the total area covered by each topping. Each topping 'blob' can be isolated based on its color.
Foreign Material Detection	The area of any abnormal colored regions on the top surface (i.e. any color that has not been defined as acceptable).
Edge/Contour Defects	Detects and measures abnormal changes in the diameters of the object (e.g. flat edges, rough edges, bites, tails, etc)

Contour Defects (bites, tails, etc)

3D Height Modeling

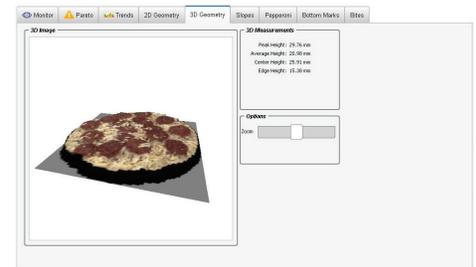## BOTTOM SURFACE ANALYSIS

Bottom Color	The average color of the bottom of the product.
Dark/Black Regions	The surface area of the dark/black regions on the bottom of the product.
Foreign Material	The area of any abnormal colored regions on the bottom surface.

Detection of Burn Marks or Abnormal Colors